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Subscription price to non-members, $5 per year. Single copies, 50 cents. Members desiring five copies or more of a single issue may obtain them at 25 cents each. Authorized as second class mail, Post O ce Department, Ottawa.

• EDITORIAL •

Student Theses Available to Members for Reference

One of the requirements to qualify for Registered Membership in our Society is the submission of an acceptable cost accounting thesis. This constitutes a very important part of the students' training and is a test of his knowledge of the practical application of the theoretical principles of Cost Accounting.

A thesis must cover a complete cost system as applied to a specific business which may be real or hypothetical. It may also be confined to certain phases of cost accounting, if the subject and scope have been first approved by the educational committee of the Provincial Society of which the student is a member. Before attempting to write his thesis, the candidate must first become very familiar with the company on which his study is to be based — its organizational structure, its manufacturing processes, if it be an industrial concern, or methods of operation if it be a commercial business or service enterprise. He must also understand the management problems which are peculiar to that particular type of business. A cost accounting procedure must then be developed which will best meet the needs of the business in question and be based upon sound accounting principles.

In making such a comprehensive study of a cost system which is actually in operation, certain deficiencies will be found, and refinements will have to be incorporated into the thesis if it is to be acceptable. To accomplish this desirable result, considerable research and intensive study is essential, thereby adding to the candidate's knowledge, and at the same time enabling him to make a valuable contribution to the improvement of existing methods.

In the older affiliated Provincial Societies of Ontario and Quebec, there has now accumulated a rather impressive list of theses covering studies of a wide range of business enterprises. Of particular value is the number in which are recorded in some detail, cost systems for small businesses. This is a desirable feature, since the bulk of our nation's business is done by companies employing less than 500 people, and they are the companies lacking most in cost accounting information.

It will be appreciated that these theses contain a wealth of information and would be of great value as reference material to our members. With this thought in mind, each author was asked for permission to make his thesis available for reference purposes. If a thesis were based upon the cost procedure of an operating company, such permission was to be granted only with the approval of the company in question. We have accordingly listed on page 32 the subjects covered by the

theses on file and they may be obtained by any of our members as part of our library service.

In satisfying the requirements for Registered Membership, the student has a wonderful opportunity of assisting the Society in its efforts to promote the knowledge, skill and proficiency of its members.

Executive Forecast for 1949

Management expects a downturn in 1949. During the last six months there has been a considerable, even drastic, loss of business confidence. (It must be kept in mind that last November many poll surveys lost considerable face, there is still a certain amount of merit in such sources of opinion). While six months ago 29% of all business men looked forward to a slackening in business in general, now a full 65% are expecting a recession of some sort. At this same time economists are less pessimistic than businessmen in that only 41% of them as compared with 65% of businessmen, expect a downturn in 1949. Nearly one-fifth of the economists think that business might be moderately better and sounder in 1949.

Regarding the opinion that a downturn has occurred, of the businessmen 48% say YES, and 52% say NO. Of the economists, 22% say YES and 78% say NO.

It is also reflected that there is no consideration in industrial planning for an adverse effect due to a 1949 WAR.

The conclusion appears to suggest that any recession will be merely the settling down from an abnormal business volume to the more normal volume accompanied by an easing of prices due to much demand having been satisfied.

With our houses in order, we can face 1949 with great confidence.

Something to Think About

An Analysis of statistics released by the Dominion Government shows a trend that bodes ill for management and labor alike, and is something worth studying by those who plan and those who work. Figures show that last year i.e. in 1947, 8% more people were employed in the Dominion of Canada and 11% more capital goods (plants and equipment) were being used. Yet this increased number of employees, plants and equipment only produced an increase of 3% of goods and services in the 12 month period. No country stands still. The minute we stop going forward we are moving backward. Let everyone pull his weight.—Hamilton Chamber of Commerce News Letter.

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Chapter Notes

BAY OF QUINTE CHAPTER

The regular monthly meeting of the Bay of Quinte Chapter of the Society of Industrial & Cost Accountants of Ontario was held in the form of a Christmas Dinner Party in the private dining room of the Bar-B-Q Tavern Restaurant on Monday, December 20th at 6.30 p.m.

Following the dinner, Dave Duffy, Student Group Chairman supervised an educational "Quiz Program", Twenty-one members and guests were submitted to accounting questions from examination papers, which resulted in lively discussions. At times, the answers stumped the questioners, even with their access to authorized support from recognized text books.

Guests of the Chapter were:
Charles Hewson, Mead Johnson & Co. of Canada Ltd.
Mark Woodcock, Lorne MacDougall Insurance Agencies Limited.
C. M. Cawker, Bellevue Finance Corp. Ltd.
Thomas Chappell, Stewart-Warner-Alemite Corp. of Canada Ltd.
H. A. Lennox, retired, formerly with Corby Distilleries Ltd.
Bruce MacRae and Walter Breach, Belleville-Sargent Co. Ltd.
Mel Richards, Houston Lumber Co. Ltd.

Harold Kellar was congratulated by Art Lockley on behalf of the Chapter for passing the final examinations of the International Accounting Society.

FORT WILLIAM-PORT ARTHUR

The December meeting of the Chapter took the form of a "Ladies' Night" at which a total of 53 members and their ladies enjoyed an evening of dancing. During the intermission, entertainment was provided by Dr. Arnold Phillips who gave a musical interpretation of "What Happened at a Christmas Party". Another member, Michael Kuzik sang two solos, while Mrs. D. Hassard provided the party with two comic monologues.

The Committee in charge was J. A. Aitken, C. W. King, R. J. Hunter, Harry Smith, and L. Dack.

KINGSTON CHAPTER

Kingston Chapter held their annual Christmas Party at Vinny Morrison's Party Lounge, Monday evening, December 20th. Following

a full-course dinner, highlights of the evening's fun were a coloured movie of a coast-to-coast trip presented by D. L. McKnight, Vice-Chairman; ledgerdemain and illusion by Abraham the Magician, and a 20-game Bingo capably run by C. H. "Jack" Compeau.

George E. Carson, Chairman, welcomed guests Mr. and Mrs. C. A. Devlin, representing the Kingston Whig-Standard, and Mr. F. W. Summers, Divisional Accountant from C-I-L's Nylon Division.

Bingo prizes were won by Mr. and Mrs. Dud Boal, Bill Leonard, Joe Kane, Mrs. Bud Jackson, Mrs. John Hall, George Carson, Joe Downey, Miss Doris Wiskin, Don Laturney, Mrs. Mel. Robinson, Alex Taylor and Mrs. Bill Denee who won two chickens much to the chagrin of those who won a package of cigarettes or a pair of nylon hose.

The committee, composed of George Carson, Chairman; Bud Jackson, prizes; Alex. Taylor and Lloyd McKnight, program; and John Hall, refreshments, were complimented on the excellent party with particular reference to the potency of the refreshments and of the comments of the narrator during his excellent colour movie.

TORONTO

On December 9th the members of the Toronto Chapter were the guests of the management of the Seiberling Rubber Co., in a visit to their modern rubber processing plant. The members of the Seiberling staff who acted as guides were very hospitable and went to great pains to make the visit instructional. The fabrication of tires from the raw rubber through to the warehouse was of great interest to all of the guests. After the plant visit, refreshments were served and at this time Mr. C. J. Dutton expressed the thanks of the Chapter for the hospitality of the President and executives of the Seiberling Rubber Co.

COST ACCOUNTANT WANTED

For special work by large manufacturer located in Montreal. Applicant must possess experience, initiative and be able to make own decisions. Engagement to be on a temporary basis with one year's employment as guaranteed minimum. Excellent salary in view of temporary nature of employment. Reply stating qualifications, previous experience and salary to Box 11, Cost and Management.

Current Literature Digest

By HAROLD BRICKER, C.G.A., R.I.A.

WHAT BUDGETING AND FINANCIAL FORECASTING WILL DO FOR A NEW COMPANY

The N.A.C.A. Bulletin Vol. XXX, No. 7, 12-1-48, published an article by William E. Arnstein, under this heading.

In an initial budget technique, it is the important thing to HAVE an initial budget. The particular forms and methods used will vary with the enterprise and the circumstances. However, certain specific techniques have been found especially useful in attacking this problem. It will be noted that these techniques differ from those used in budgeting existing companies. Although they have been described in connection with an entirely new enterprise, they have also been found of great value where an established enterprise adds an entirely different new product, opens a large branch factory or makes a policy change so revolutionary that past performance ceases to be a usable guide.

Few companies starting business prepare adequate budgets before commencing operations. Although the executives of the business as a new enterprise may be convinced of the value of budgeting technique and may have worked with budgets in their former connections, they are likely to defer the preparation of a budget for their new venture until it has been in operation for some time, the reasons for the delay are not far to seek:

1. Top executives are too busy and junior executives have not yet been hired.

2. The budget cannot forecast as accurately as is customary in other budgets due to the complete lack of operating experience and uncertainty as to future plans.

Since pertinent history and experience is lacking, the budget cannot be as accurate as those ordinarily prepared in older enterprises and consequently its use for certain purposes is admittedly limited.

1. Its use as a yard stick alongside of actual accomplishment to measure management's effectiveness is limited by the nature of the background material from which it is built.

2. Its use to determine the timing of future events, such as financial requirements, will result in less exact forecasts than can be obtained from budgets in older companies.

3. It must be revised frequently in order to retain its usefulness.

Since the first of these limitations bears upon what is, perhaps, the major reason for the existence of most budgets it is proper to consider whether the functions which the initial budget will fulfill justify the labor involved in its preparation. Depending on circumstances an initial budget may be expected to:

1. Clarify the thinking and planning of each executive by forcing him to consider all phases of his functions at one time and in writing.

2. Bring to the fore the time element in future plans and show the individual executives how important errors in timing can be.

3. Coordinate the plans of the various top rank executives.

4. Show the probable amount of timing of cash requirements.

5. Show the kind of balance sheet the company will have on which to attempt to secure borrowed funds, if such funds are needed.

6. Forecast the volume required for the profitable operations, (the break-even point) and when such volume will be reached.

7. Show the probable time needed before the inflow of CASH will exceed the outlay and the time needed to repay borrowed funds, if this is contemplated.

8. Prove that operations, if they develop reasonably close to expectations, will yield profits sufficient to justify the investment.

9. By later comparison with actual results, provide the company's president a means of gauging the experience and judgment of the individual executives who provide the figures on which the initial budget is based.

10. By later comparison with actual results show the company where it is failing to meet expectations. Although the failure cannot always be corrected in the particular operation, other operations can often be modified to compensate for the loss when failure to meet expectations is thus high-lighted.

It is admitted that, in a business small enough for one man control of these result factors, favourable results can be obtained through the application of common sense, without budgeting. Where the executive control in operation is distributed among various principles, consolidated administration is essential.

The greatest service which can be rendered by the comparison of budget and actual in the first few months is the hint given by a marked unfavourable deviation from budget that action is indicated elsewhere to compensate for the unfavourable differences. Some of the possible deviations and corrective actions might be as follows;

Sales below budget; — Cut production, lower consumer prices, increase trade discount, cut overhead.

Collections slow; — Increase cash discount, drop poor credit customers, factor accounts receivable.

Tool costs high; — Subcontract certain parts, increase sales volume through advertising, raise prices.

Production costs high, — Replace the factory manager, increase production runs, employ a consultant.

General expenses high, — Review individually and eliminate excesses.

BUDGETS CAN HELP AN OPERATING BUSINESS, — AT ANY STAGE OR AGE

ACCOUNTING RESEARCH

We have received a copy of this new publication Vol. 1, No. 1, November 1948. It is published by the CAMBRIDGE UNIVERSITY

PRESS, Bentley House, 200 Euston Road, London, N.W. 1, England. The price is 7s. 6d. per, or at a subscription rate of 25c. net, post free.

For material, they have instituted a PRIZE SCHEME. They have invited entries of not less than 20,000 words on subjects in the field of accounting in various phases through statistics into the economic interests to business and professional thesis stature. The considerations are worthy in 100 guineas for first prize and 50 guineas for second prize. Since this competition appears to be world wide, whatever is submitted must be original and good.

REPLACEMENT COSTS — AN ECONOMIST'S VIEW

An article under this heading by Leo T. Little discusses in some detail the various points of view regarding this subject.

Most economists appear, indeed, to have little cause for criticizing the accountant for having a "backward-looking approach" to this particular issue, on the grounds that he looks to the historical costs of fixed assets, and for congratulating themselves on their "forward-looking approach".

One thing should by now be plain, it is, that though the historical costs of fixed assets are still meaningful in the purely legal context to which the accountant is largely restricted when he performs his numerous variations on the theme of the money value of some element (for example, proprietorship or creditorship) in a business, these costs are meaningless in an economic context.

It by no means follows that the accountant is correct, so far as economic analysis is concerned, in uncritically using an historical costs basis for determining the accrued charges on fixed assets. And it may well be that, in practice, the basis that meets the criteria we have set up will be much closer, in times of rapidly changing prices especially, to "replacement costs" than to "historical costs". But the main point seems to be that the determination of these accrued charges cannot of its nature be a purely accounting function — it is one of the prime tasks of entrepreneurship.

Recent years experience have shown us that no matter how good we may think we are, — THERE MAY BE A BETTER WAY OF DOING ANYTHING.

Standard Costs and Production Control in a Parts Manufacturing Plant

By A. E. Spearman

INTRODUCTION

The outline of the Cost system described in this thesis is one proposed for a small plant employing roughly three hundred workers. The Company has developed or has manufacturing rights to a few diversified products which are sold under trade names. These consist of component parts used on automobiles, household utilities and farm equipment, such as switches cardoor hardware and trims. Since there is a comparatively limited market for these lines, a sizable portion of the plant production is made up of parts manufactured to specification for the automobile, implement and allied trades. This latter part of the business, which must be carried on to reduce the over-all cost, is taken on a highly competitive bid price basis. In other words, the prime manufacturer will send like specifications out to several sub-contractors who will all submit bids. The lowest tender will take the whole order. Once the order is accepted, the plant must synchronize production of sub-contracts into the production schedule of the prime manufacturer, which is generally quite iron bound. The same machines and equipment are used, for the most part, for both our own products and the sub-contracts.

The purpose of this Cost system is to provide management with data which will tell him

(a) which of his own lines are profitable and should be further developed,

(b) the actual cost of a unit and the efficiency with which it is produced.

(c) his break-even point, and how much sub-contracting will be necessary to operate the plant at an efficient level.

(d) a cost record of his sub-contracting to inform him of the most profitable lines of sub-contracting to take and with what firms,

(e) how much of the plant can be tied up with long range sub-contracting schedules, and when to build up the inventory of his own products to take up slack production.

Above all, the cost system must be economical in operation in order to keep overhead down to a place where the company will be on good bargaining ground for sub-contracts.

ORGANIZATION

SALES DEPARTMENT

Trade Products

The Sales department is comparatively small and is divided into two sections, one for the trade products which are sold mainly direct to manufacturers in three concentrated fields. A sales engineer contacts the manufacturers with details as to how our products can be used by them, and recommends minor adjustments to suit each customer. He

also directs the advertising in his field mainly through trade journals. His department further makes a continuous survey to keep management informed of demands for any new products within our production capacity that we could profitably develop.

Sub-Contracts

The second section of the Sales department works very closely with the Engineering, Production and Scheduling departments. When a tender is submitted, Sales decide first if it is within our scope of manufacture and if we can afford production space to handle it. Providing this is so, an estimate is drawn up of the tools and dies required, their cost and the date they will be ready. Purchasing meanwhile estimates material costs, making allowance for scrap and spoilage. With this information, the Production department estimates operations needed, time and labour costs. Burden is applied by the Cost department. (See p. 14). The tender is then submitted and price is shaded up or down, depending upon the competition and need for the order. This section of the Sales department in turn looks after its own advertising which consists simply of devising ways and means by which it can keep the organization and its scope in the minds of the few companies for whom we subcontract.

The Sales department operates a record section, showing each customer's purchase by part number, quantity ordered, quantity shipped, date shipped, balance of order and unit selling price.

The whole department operates on a flexible budget. It is charged at standard rates for the value of the time spent by engineering, planning, etc., on its behalf. For example, if Purchasing spends five hours on an estimate, it simply fills in a special memo charging Sales with five hours. Sales okays this memo, passing it on to the Accounting department which charges Sales and credits Purchasing from a monthly summary.

The efficiency of the Sales department is gauged by the percent of departmental cost to Sales and departmental cost to profit. These figures are also used in budgeting.

The Sales staff are all straight salaried employees who receive a bonus based on their department's cost to profit ratio.

PURCHASING DEPARTMENT

We will deal with the Purchasing Department only from the standpoint of its relations with the Accounting and Production Departments. We deal with this department here as it appears to be the logical sequence that after the sale has been made, the raw material must be ordered.

Purchase Order

All material purchased for production is given a number prefixed by P.M., and factory materials are classified with numbers prefixed by F.M. The numbers run in series so that all steel materials start with the number 1 and a hyphen. All brass materials start with 2 and a hyphen, and so on. The numbers following the hyphen catalogue the steel or brass into grade, finish and size. e.g.:

P.M. 1-000—Cold rolled steel flats 5/64 x 1"

P.M. 1-100—Hot rolled pickled and oiled rounds 2/3"

M-49-1

TOOLS
SPEC. EQUIP.

ESTIMATE

S. P. | DOM. | EXP.

CUSTOMER | S. P. DATES
ITEM
DESCRIPTION
QUANTITY | UNIT | | YEAR | % PART | U. S. PRICE | INDEX

DATE
THEIR PART NO.
OUR PART NO.

P. M. NO.	MATERIAL	QUANTITY	UNIT	PRICE	AMOUNT	U. S. M. VAL.
1						
2						
10						
11						
M	L	TOTAL				

1 SHRINKAGE AND SPOILAGE	%
2 LABOR	
3 TOTAL	
4 OTHER EXPENSES	
5 MFG EXPENSE (BURDEN)	
6 TOTAL	
7 GEN. EXPENSE	% OF SELLING PRICE
8 COMMISSIONS	
9 ROYALTIES	
10 PROFIT	% OF SELLING PRICE
11 TOTAL	

M. NO	EXCH	D. ON EX.	W.T	

OPER. NO.	LABOR OPERATIONS	HOURS	RATE	TOTAL
1				
2				
10				
11				
12				
13				
14	INSPECT			
15	SHIP			
	TOTAL			

PART NO

P.M. 2-000—Brass sheets 1/24" x 36"
P.M. 2-100—Brass tubing 1/64" x 1"
P.M. 8-000—Houghto Black compound

Similar treatment is applied to factory material, thusly,

F.M. 4-003—Allen head cap screws 3/8" x 1"
F.M. 4-004—Allen head cap screws 1/4" x 1"
F.M. 81-009—Cleaning compound "X"
F.M. 81-010—Cleaning compound grade B

A card is set up in a card file for each F.M. and P.M. number. These cards contain a summary of all the salient points of the purchase, such as:

Quantity bought	Freight rates
Date bought	Laid down cost
Supplier	Unit cost
Price paid	Standard cost
Terms	Alternate supplier

These cards keep ready, accurate and detailed information right at the Purchasing Agent's finger tips. They are used in setting standard costs and estimating work as well.

The code numbers are rigidly adhered to and are put on the purchase requisition, purchase order, receiving slip, invoice, estimate card, factory orders and cost records.

The efficiency of the Purchasing Department is gauged partly by the price variance between material cost actual and standard. A further gauge is the obsolescence of raw material as it is written off from stores records.

Production materials (PM) are carried at standard cost while factory materials (FM) which ultimately find their way into cost through application of overhead burden rates are carried at actual cost.

STORES DEPARTMENT

Material Used Summary

A Material Used summary is prepared by the stores ledger keeper and forwarded to the Accounting Department at the end of every month. This is broken down into direct and indirect material in order that the adjusting credit entry to the control accounts may be made to account for the consumption of material.

Machine Shop Stores

There are two stores in this plant, one main store adjoining the Receiving Department and a Machine Shop store room. This latter store is adjoining the Machine Shop, where the tools and dies are made and the millwrights, setup and repair men operate from. All material in this store is indirect and a perpetual inventory is not kept. When items for this store are received they pass through the receiver who makes out a receiving slip and passes the item along to the main stores keeper who has the storekeeper for the tool room sign for it. When a requisition for material is made from this store, it is forwarded to the Machine Shop clerk without any prices. When the invoices are received they are routed to the Engineering Department who okay the price. The Purchasing Department apply the approval stamp, enter the item on the

purchase record card by the F.M. number and approve the invoice. The Purchase Department's approval is final. The Engineering Department is just an additional check. These invoices are then charged to a Machine Shop expense account.

Finished Stock Stores

A section of the main stores is devoted to finished stock. This is received and signed for from the Inspection Department and entered in the Finished Stock section of the perpetual inventory. This is drawn out by requisition only — in short, it is treated as raw material.

ENGINEERING DEPARTMENT

We now have the sale made, the material purchased, received and in the stores. The next step is to set up the machines and make the tools and dies. The Machine Shop under which this work is done is all under the direction of the Engineering Department.

When new tools or dies are required for a subcontract, an estimate requisition is made up by the Engineering Department. It is submitted to the Sales Department, and an appropriation is set up to cover it by the budget director. A work order sheet and cardex card is prepared and a die number is selected. The drafting is done and the plan submitted to a tool maker. He draws his material from Machine Shop stores as he needs it simply by filling in a requisition with the work order number on it, signing it and leaving it with the Machine Shop stores keeper who gives him the material. The Machine Shop stores requisitions and daily time reports from the die maker go daily to the engineering clerk. The daily time reports go to the Payroll Department, where they are checked against the time cards of the workmen. He enters all material on the Work Order and shows daily progress by tabs on the cardex file of each job. When the die is finished, the work order is totaled as to the number of hours each workman spends on it, and is passed on to the Purchasing Department. Purchasing prices the materials listed as used at actual from the F.M. cards and then passes the work order to the cost clerk. He extends the labor at actual, and extends the material used at actual. A burden rate for the tool room, drafting and engineering is then applied and sales tax computed. This shows the total cost of the die, and it is set up in a memo ledger under the die number.

This ledger record shows die number, name, description, for what part, for what customer — if any, what portion, if any, was charged to the customer and the work order number. The machines upon which it can be used is noted and a list with dates of all repairs is made on the back. Alterations and engineering changes are added to the value and sales tax is charged. When new equipment is made in the tool room, a journal entry likewise removes it from expense, and sets it up as an asset.

A work order is kept of setup in each department, one for machine maintenance and repairs in each department, one for experimental work done by the Machine Shop for each department, etc.

A monthly summary is made of work orders and accrued wages are credited and charges are made against proper departmental expenses.

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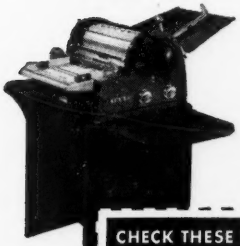

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DITTO of Canada, Ltd.
310 Spadina Ave., Toronto, Ont., Canada

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PRODUCTION
PURCHASING
PAY ROLL
ORDER-BILLING

MANUFACTURING
- ☐ Order and Billing Systems
- ☐ Parts Order
- ☐ Assembly Order
- ☐ Purchase Order Receiving Systems
- ☐ Payroll Systems, Accounting Reports
- ☐ Salesmen's Bulletins, Price Book Sheets, Quotas, etc.
- ☐ Charts, Maps, Graphs, Drawings, etc.
- ☐ Accounting Statements & Reports

WHOLESALERS
- ☐ Order and Billing Systems
- ☐ Salesmen's Bulletins
- ☐ Price Book Changes

FINANCIAL INSTITUTIONS
- ☐ Daily, Weekly and Monthly Statements
- ☐ Trust Reports, Stock Transfers
- ☐ Installment Loan Systems

INSURANCE COMPANIES
- ☐ Policy Card Records, Bulletins to Agents
- ☐ Reports, Statements & Abstracts
- ☐ Abstract of Claim

PUBLIC SERVICE
- ☐ Requisition and Purchase Order Systems, Bid Requests
- ☐ Accounting & Finance Statements
- ☐ Drawing & Sketches

RAILROADS
- ☐ Passing Car Reports, Operating Reports
- ☐ Car Interchange & Interline Exchange
- ☐ Accounting and Financial Statements

DEPARTMENT STORES
- ☐ Accounting and Financial Reports
- ☐ Sales and Stock Reports
- ☐ Ruled Forms, Bulletins, etc.

CHAIN STORES
- ☐ Inventory Sheets
- ☐ Warehouse Order and Billing
- ☐ Price Lists and Changes
- ☐ Advertising Layouts

CONSTRUCTION AND BUILDING
- ☐ Specifications, Bid Requests
- ☐ Drawings and Sketches
- ☐ Payroll
- ☐ Purchasing Receiving

PRINTING AND PUBLISHING
- ☐ Printing Orders
- ☐ Advertising and Circulation Statistics
- ☐ Advertising Presentations
- ☐ Reports and Statements

ASSOCIATIONS
- ☐ Bulletins to Members, Credit Inquiries
- ☐ Statements and Reports, House Organ

MEAT PACKERS
- ☐ Order and Billing Systems
- ☐ Sales Bulletins and Price Lists
- ☐ Accounting and Financial Statements

ACCOUNTANTS
- ☐ Profit and Loss Statements
- ☐ Balance Sheets, Audit Reports
- ☐ Ruled Forms, Working Papers
- ☐ Income Tax Reports

GOVERNMENTS
- ☐ Accounting Reports, Bid Requests
- ☐ Purchase Orders
- ☐ Engineering Drawings
- ☐ Charts and Graphs
- ☐ Specifications
- ☐ Material Lists

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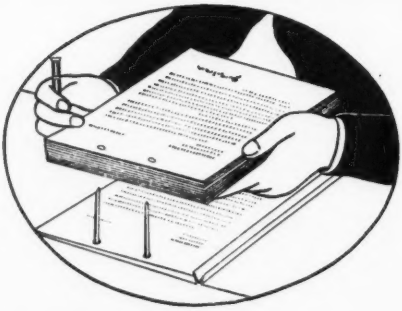

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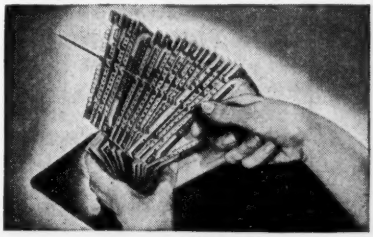

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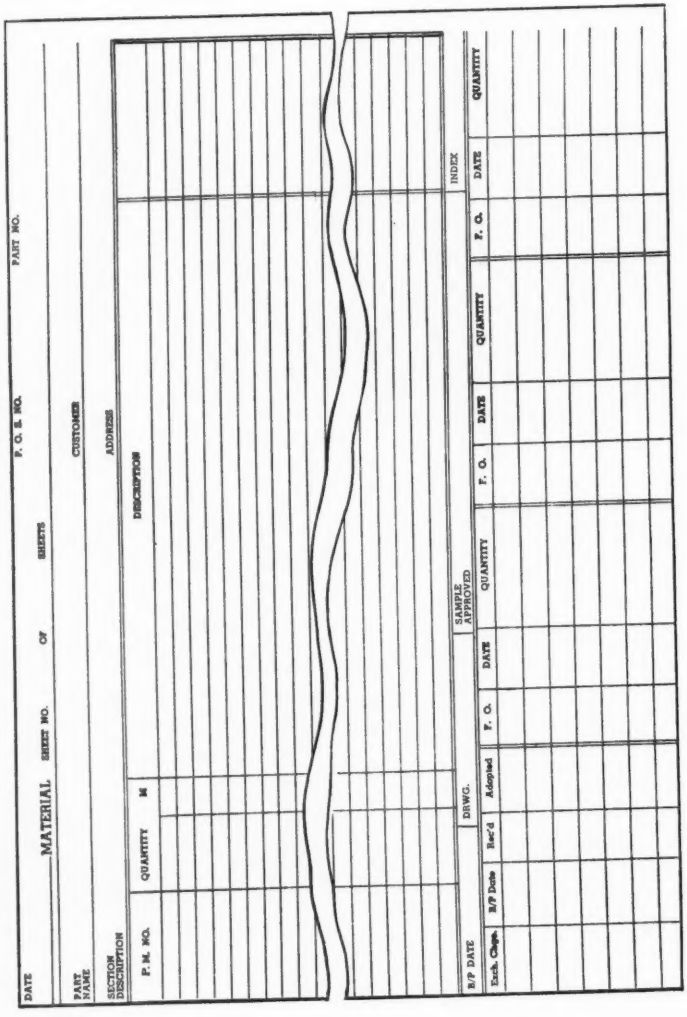
DATE
MATERIAL
SHEET NO.
OF
SHEETS
P. O. S. NO.
PART NO.
PART NAME
CUSTOMER
SECTION DESCRIPTION
ADDRESS
P. M. NO.
QUANTITY
M
DESCRIPTION
B/P DATE
DRWG.
SAMPLE APPROVED
INDEX
Exch. Chgs.
B/P Date
Rec'd
Adopted
F. O.
DATE
QUANTITY
F. O.
DATE
QUANTITY
F. O.
DATE
QUANTITY

All Machine Shop stores and expenses are charged to Machine Shop Expense Account direct from the Voucher register.

The Machine Shop expense account is relieved by a journal entry, charging the proper departmental expenses in the same manner as Accrued Wages are for Machine Shop labour.

PLANNING AND PRODUCTION

Before Production can start, a master schedule must be drawn up. This plant is able to group orders for approximately three months ahead according to delivery date and product. This master schedule will give the number of each product to be manufactured as well as the approximate quantity to be shipped on each delivery date.

The next step in production is the preparation of a "Parts Schedule" which will show the number of parts needed for the article and the date the various quanitites will be required. It is then decided which departments will produce each part. The material control clerk writes out a "Material Order" (See p. 20) for the required material to meet the schedule, making due allowance for scrap and a percentage of rejects. This material order is sent to stores, who advise him of the materials in stores, and in what quantities. These quantities are reserved for him by the stores ledger keeper, and he writes out requisitions to the Purchasing Department for the balance required. They advise him if his proposed receiving dates of materials required are acceptable. Having secured the material or promised delivery date of same, he issues material slips to the foreman of the scheduled production department for the total quantity needed, the P.M. number of the material and the quantity needed per 1000 or 100 pieces. He also states the operations on which it is to be used. All this information is obtained from the "standard material specification sheet".

As the "parts schedule" has already set out the departments in which this particular part is to be made and assembled, the planner's next step is to gauge the machine loading. This is done by a control board. The control board in this plant has a section for each department and a line for each machine. The "control board" is divided into weeks at which point there is a slot for "machine slips" for that week. Each week is divided into days which in turn show a peg hole for every two hours. This board shows when each machine is in operation for a period up to four months in advance. Due allowance is made for manufacturing order changes, setup and die changes. The "machine slips" from which this board is operated show the job order, the part, the quantity, standard time required and the machine to be used. These slips are made from the 'standard labour operation specification sheets".

Manufacturing orders are then issued to the department foreman, telling him the parts to be made on each machine, the quantity and the schedule for each machine. He then sees that the material as specified by material control is requisitioned and delivered from stores in the correct quantities and in readiness for the operator. The planning department advise the dies needed and the foreman requests aid in setup if needed from the machine shop. The Production Department also sees to it that the proper labour is on hand throughout the schedule.

The foreman requisitions the supplies as he needs them. Production is then ready to start.

The plant is departmentalized only to the point that responsibility for any operation error or improvement can be definitely established. Once the schedule, material and dies have reached a department, the foreman must see that the production as planned is maintained. It is this chain of definite responsibility that keeps the plant on its toes. The cost variances will tie efficiency down to a department, and hence to a foreman. If his machine breaks down, a record of each machine will show its condition, who sets it up and who is responsible for maintenance. If planning is at fault, it is traced through the production order to the responsible party. If the material is at fault it too may be traced back to the source. The foreman is also responsible for labour efficiency in his department.

INSPECTION

This is charged as direct labour and a standard is set per 1000 pieces and a variance is taken to check on the quantity of work done. Greater emphasis, however, is put on quality. Rejects are classified as repairable and irreparable. For repairables a separate work order is issued. Labour is productive, and is charged to the production order which had the rejects.

ACCOUNTING

MATERIAL CONTROLS

The standard amount of direct material applicable to a month's production is the only charge for direct material allowable to Work in Process. Each manufacturing order issued during the month has attached to it a material order which sets forth the standard amount of material for a specified run.

The total amount of the priced material orders for the month is the standard material cost that is charged to Work in Process. The difference between this charge and the total standard cost of material actually issued, as provided by the material used summary, represents the material usage variance. This amount is charged directly to the Material Usage Variance Account and does not enter the Work in Process Account, viz.,

Dr.—Material in Process (standard)
Material Usage Variance
Cr.—Raw Material Stores
Finished Parts Stores

Excess Material issued from stores is returned on the returned material slip. This is a duplicate slip, and the copy is receipted by stores and given to the department which is returning the material. The original goes to the stores ledger keeper who prices it at standard and credits the stores ledger card by an entry in red in the issue column. It is entered on the Material Used Summary reducing the debit to material usage variance and sometimes creating a favourable usage variance.

The amount of Material Usage Variance Account is represented by

the excess of stores requisitions over and above the Material Orders. Therefore, it is possible to segregate those requisitions which do not apply against a Material Order, and an unfavourable material variance can be traced directly to the department and product which caused the variance.

Scrap material is returned and weighed by the stores keeper. A scrap account is operated for each department by the stores keeper, and a monthly summary is made, crediting the department overhead with the appropriate amount. The Purchasing Department looks after the sale of this, and the credits are calculated at a standard price, e.g., so much per pound for scrap brass, so much for steel stampings, etc. The difference between the standard and actual is charged or credited to the general ledger account of plant overhead. Although the scrap credit reduces department expenses, management looks over the monthly summary, and strives to keep scrap accounts per department at a minimum.

As soon as a manufacturing order or run is finished, it is sent to the Production Department, and thence to the Cost Department. Inspection is classified as direct labour and as soon as inspection is finished, the inspector's report is sent to the Production Department.

LABOUR CONTROLS

Daily time reports are made out by each workman. These are of three colours, white for production work, pink for non-production work and green for machine shop. If a production worker spends part of his day doing productive work, and part non-productive, he fills in two time reports, one productive and one non-productive. If an employee changes departments during the day, he makes out time slips for each department. These are turned in to the department foreman each night and must cover the full time worked. Time is broken down to the nearest quarter-hour for each operation. The foreman okays each time slip. They are collected the following morning and sorted in order of employee number per department.

The cost clerk applies the actual labour rate on each time report and extends the cost. He posts directly to the production order cost sheet (see p. 25). These are filed in a large ringed looseleaf cover by part number. The clerk turns up the designated part number production order which will have all operations in that department marked, complete with standard production and rate. He puts in the date, employee number, quantity, actual time, then actual rate and cost. He checks off that line on the daily time report. He checks off all production work in that fashion, at the same time comparing that employee's production with standard. A memo to the Production Department is made regarding any great variance so that the cause may be explained at the time.

When a production order is completed, he totals the quantity, hours spent and cost. The standard time for that quantity at standard rate is calculated on the line below.

Performance Variance

Performance Variance is shown on the next line. It is simply the difference between actual time and standard time multiplied by the stan-

dard rate per hour. This shows if more or less time has been taken than standard.

Rate Variance

Directly below Performance Variance is shown Rate Variance. This is the difference between Perfomance Variance and Total Variance.

The totals on the completed production order are then posted to the Productive Labour Distribution Sheet. These are filed by department and gather together all direct labour for the month. There is a column for date, production order number, quantity and time, standard cost, actual cost, and variances. At the end of each month the incomplete production orders are ruled and a sub-total is taken. These sub-totals at the month's end are posted to the Productive Labour Distribution Sheet. The cost clerk's work is posted daily and it is important to keep it up to date. He is given extra help at the month end to sub-total the incomplete production orders. In this way, by the second of the month the actual and standard direct labour for each department is completed.

The completed production orders, after they are posted to the Productive Labour Distribution Sheet, have the material entered on them at standard, and the department burden at standard rate is applied.

A standard rate for selling and administration is added, the selling price inserted and management then has a record of each order while it is still being prepared for shipment.

It is felt that to break down the material to actual and show it as such on the production order is an unnecessary expense. The main cost variance is generally the labour. The material variance is shown monthly anyway and, if excessive, the explanation is prepared from the segregated material requisitions and the production order responsible is shown.

After the daily production time reports are entered on the production orders, the non-productive time reports are entered on the department expense sheet. This contains the department number, name, month and year, the code numbers and name of each expense item. The entry is made by posting the date, the employee number and the actual cost to the affected account.

At the end of the month the actual labour costs of departmental expenses are obtained by the total of each account on that department's sheet.

The time cards are drawn from their racks in the afternoon. The daily time reports are sorted into numerical order and checked to the cards. An entry is made on each card as to the number of hours worked. Any discrepancies are reported to the cost clerk by way of a memo which is then forwarded to the foreman of the offending employee.

It is found that this tends to make the employee careful in filling his time report, and the adjusting entry by the cost clerk is easier than sorting the time slips into numerical order and back into departments again.

A tape taken of the hours on the time cards is compared with a tape taken of the individual items on the time reports. Thus proven, the time cards are the basis for the payroll.

DIRECT LABOUR DISTRIBUTION SHEET

Operation No. 1			Dept.#A		Operation # 2		Dept.#A		Operation # 3		Dept.#B		Operation # 4		Dept. #C	
1000/1 hr Standard Quantity.			Rate 65		400/1 hr Standard Qty.		Rate 70		750/1 hr Standard Qty.		Rate 65		2000/1 hr Standard Qty.		Rate 60	
Date	Emp.	Qty	Rate	Cost	Emp.	Qty.	Rate	Cost	Emp.	Qty.	Rate	Cost	Emp.	Qty.	Rate	Cost
1/5	201	7500/8	65	5.20												
1/6	201	8000/8	65	5.20	106 121	3500/8 3000/8	75 70	6.00 5.60								
1/7	201	8000/8	65	5.20	106 121	3800/8 3200/8	75 70	6.00 5.60	261	6000/8	65	5.20				
1/8	201	8000/8	65	5.20	106 121	3600/8 3200/8	75 70	6.00 5.60	261	6200/8	65	5.20	28	5000/2½	65	1.63
		51500		33.60												
Actual		51500		33.60												
Standard		50000		32.50												
Perf Var				.13												
Rate Var				.97												

Part No. 8468S2

Form E

OVERHEAD CONTROL

In order to complete the cost of the production order, it was necessary to add burden or overhead. Considerable research has gone into overhead, realizing that if this item can be kept down, we will be in a favourable position when bidding on tenders.

Expenses are divided into variable and non-variable groups and a break-even point of production is very carefully arrived at. The variable expenses are broken down onto a table showing standard expense for operations from 0% of standard plant production to 130% of standard plant production. This is shown at 10% intervals.

1. The Fixed Charges are distributed to the various departments by the investment each department represents. Taxes, insurance and other accruals are brought into the expense accounts each month and offset against reserve accounts. This is done so that cost of production will not be understated.

As stated, depreciation on assets is shown on the asset register. It is realized that some machines may be fully depreciated while depreciation in another department is just starting. It is, however, charged at a flat rate per departmental investment as further breakdown is not worth the expense and does not necessarily give the true manufacturing cost.

2. Operating Supplies are distributed on the basis of Direct labour hours.

3. Salaries and Wages are distributed on a labour hour basis.

4. Power, Heat and Light. Power is distributed on a horsepower per department basis, heat by cubic capacity per department basis, and light on a square foot per department basis. These figures are taken from the plant layout plans and are reasonably constant.

5. Maintenance. Building repairs are distributed by department square footage; Equipment and Machine Repairs by department value; setup and machine shop expense by labour hours. These last two, of course, are mainly direct charges to departments by a journal entry from Machine Shop work orders, leaving only the account balance thus to be distributed.

6. Miscellaneous are distributed by labour hours unless a large expenditure is easily segregated to certain departments. The Service departments are then proportioned over the Production departments on a basis determined by the services rendered.

At this point all the manufacturing overhead expenses appear in the columns for the productive departments. Manufacturing journal entries are then prepared, closing out the service departments' accounts, — thus showing all expenses in the open productive departments.

There are two variances for overhead, the Burden Cost Variance, and the Burden Capacity Variance.

The standard hours of each department divided into the net allowed hours determine the percentage level at which the department operated and also indicates the percentage column of the flexible budget to be used in comparison with actual expense. The figure derived from this comparison is the Cost Variance.

BUDGETS

Considerable importance is placed on the budget of this organization and necessitates considerable work on the part of the chief accountant. A mere outline of this work will be attempted herewith.

The Sales Department prepare the sales estimate and management approves it, recommending more or less effort and stressing the lines which are most important.

The operating statements are prepared, comparing 12 months, 4 quarters and yearly operations. Above each figure, in red, is the year previous similarly broken down and above that again is the year before that, shown in green, and likewise broken down. This gives a true picture of past performance per item per month per period.

The statements are then converted to a percentage of sales for each item and likewise compared with previous years. This tells management the business cycles and trends.

Graphs are used extensively to show various controllable items and relationships.

Expenses are broken down to standards for each department. The 100% standard output was set at 75% of full plant capacity. From this 100% standard, intervals were then set up 10% each way, from absolute shutdown point — 0%, to absolute plant capacity — 130% of standard.

The Fixed Expenses remain constant but mathematical formulae and graphs were needed to compute the variable expenses up and down from 100%. The 100% was carefully established by time and motion studies, past records and individual cost centre expense reviews.

As previously explained, these budget figures for expense items act also for standards.

It should also be noted that all operating cost figures are computed in dollars only — the cents being omitted. The reasons for this are that it makes statements easier to read and the proportions easier to grasp. It also saves calculating and preparation time.

In addition to dollar amounts, the budget contains the normal machine hours projected for each cost centre. This is done so that the variable expenses may be applied in relation to the machine hours at actual for the period to normal for that period.

CLOSING ENTRIES AND STATEMENTS

From the standpoint of a cost system, we are concerned only with the operations ledger and a few accounts in the general ledger. The operations ledger has a separate account for each expense as previously listed. Before the general ledger can be closed for the month all standard cost calculations must be made. They are,—

1. Transfer of Raw Material from the Raw Material Inventory to Work in Process Inventory.

This journal entry is made from the Material Used summary as prepared by the stores keeper at Standard Rates.

2. Transfer of Operating Expenses from Manufacturing Ledger to Work in Process Inventory or Selling and Administration Accounts.

The source of this journal entry is the breakdown sheet.

3. Transfer of completed manufacturing orders from Work in Process Inventory to Inventory of Finished Goods.

This is taken from the total of the summary of completed orders at standard cost.

4. Transfer of Cost of Goods from Inventory of Finished Goods to Cost of Goods Sold Account.

The shipper is costed at standard before the invoice is typed as explained under Accounts Receivable. These are then summarized and this summary figure is the basis for the journal entry making this transfer.

5. Charge to Accounts Receivable for the month's sales.

The sales journal sheet is broken down between Sales, Accrual of Sales Tax Payable, Prepaid Freight, etc. The total of the Sales column is our journal entry for this item.

When all these entries have been made and the General Ledger balanced, the Financial Statements may be prepared. The Balance Sheet is the conventional type.

The Profit and Loss Statement appears as below, the variances are consolidated and are considered an operating cost in the month they are incurred.

PROFIT AND LOSS STATEMENT

For the Period Jan. 1, 1945 to Dec. 31, 1945.

Sales		$ 2,000,000.00
Cost of Goods Sold at Standard Cost		1,400,000.00
		$ 600,000.00
less:—		
Variance Volume (unfavourable)	$5,000.00	
Variance Controllable (unfavourable)	1,000.00	6,000.00
Operating Profit		$ 606,000.00
less:		
Selling Expense	100,000.00	
Administrative Expense	125,000.00	225,000.00
Net Profit Before Tax		$ 381,000.00
less:		
Dominion Income & Excess Profits Tax		181,000.00
Net Profit		$ 200,000.00

CONCLUSION

In conclusion, it may be said that this thesis was written, bearing in mind that in a highly competitive business such as this, expenses must be kept to a minimum even in the cost of operating the accounting system. The information must be given rapidly so that control can be exercised on inefficiencies as they occur. Management must be told of

the profitable and non-profitable orders as well as what department is operating below par. The overall plant efficiency must also be reflected in the statements.

Supporting statements were not included, since it was realized that once the system has been established, supporting statements on any phase of operations, giving any amount of detail, could be given as management so directed. Unless these statements are used, they are one of the frills that the business can eliminate.

« STUDENT SECTION »

FUNDAMENTALS OF COST ACCOUNTING

Comments by A. V. Harris, C.A.

Question 2.

The Marquad Manufacturing Company, which operates on a continuous process cost system, produces a single product which goes through three departments. No inventories of work-in-process were on hand January 1st. During the month of January, 25,000 units were started in Department A. Of these, 20,000 were completed and transferred to Department B. Of the remaining 5,000, 4,000 had all the necessary material for completion in Department A and one-half the necessary labour and expenses applied. The balance of 1,000 units were lost in production. Of the 20,000 received into Department B, 15,000 were completed and transferred to Department C; the remaining 5,000 had three-fifths of the necessary labour and expenses applied to them. Of the 15,000 received into Department C, 10,000 were completed and sent to the stockroom; the remaining 5,000 had one-half of the labour and expenses applied.

The departmental cost reports for the month of January contained the following information:

	Dept. A	Dept. B.	Dept. C
Material costs	$ 3,648.00		
Labour costs	4,444.00	$ 1,872.00	$ 1,875.00
Manufacturing expenses	2,222.00	624.00	1,250.00
Total	$ 10,314.00	$ 2,496.00	$ 3,125.00

From this information you are asked to prepare:

1. A summary Cost of Production Report showing in three parallel columns the costs and the unit costs by elements and in total in each department; the cumulative unit cost; the value of the work completed in each department; the cost of the work-in-process in each department; and the quantity received in each department and the disposition of these units in each department.

2. Journal entries to record the cost of production and the transfers affecting each department.

3. The inventory of work-in-process remaining in each department analyzed by elements of costs — material, labour and manufacturing expenses.

4. The selling price per unit of the completed product if the gross profit is 50 per cent. of the cost to manufacturer.

Solution to Question 2

THE MARQUAD MANUFACTURING COMPANY
COST OF PRODUCTION REPORT
JANUARY, 1948

	Dept. A	Dept. B	Dept. C
(1) Material Costs	$ 3,648.00		
Labour Costs	4,444.00	$ 1,872.00	$ 1,875.00
Manufacturing Expenses	2,222.00	624.00	1,250.00
Total Department Costs	$ 10,314.00	$ 2,496.00	$ 3,125.00
Costs from previous Departments		9,100.00	8,905.00
Sub-total	$ 10,314.00	$ 11,596.00	$ 12,030.00
Work Completed to other Departments	**(9,100.00)**	**(8,905.00)**	**(8,436.67)**
Work in Process	$ 1,214.00	$ 2,691.00	$ 3,593.33
Unit costs:			
Material	15.2c		
Labour	20.2c	10.4c	15.0c
Manufacturing Expense	10.1c	3.4⅔c	10.0c
Cost from Previous Department		45.5c	59.3⅓c
Total	45.5c	59.3⅓c	84.3⅓c
Production Report			
Units Started in Process	25,000	20,000	15,000
Units Completed to Next Department	20,000	15,000	10,000
Units Lost in Process	1,000		
Units Uncompleted	4,000	5,000	5,000
	25,000	20,000	15,000

(2) Journal entries:	Dr.	Cr.
Work in process	$ 15,935.00	
Stores		$ 3,648.00
Accrued Payroll		8,191.00

Manufacturing Expense Applied			
To record production costs as follows:			
Department A	$ 10,314.00		
Department B	2,496.00		
Department C	3,125.00		
Department B		9,100.00	
Department C		8,905.00	
Finished Goods		8,436.67	
Department A			9,100.00
Department B			8,905.00
Work-in-Process—			
Department 'C"			8,436.67
To record transfers affecting each department			

(3) Inventories of Work-in-Process remaining in each department

Department A

Material	4,000 units @ 15.2c	$	608.00
Labour	2,000 units @ 20.2c		404.00
Manufacturing Expense	2,000 units @ 10.1c		202.00
Total		$	1,214.00

Department B

Previous Dept. Cost	5,000 units @ 45.5c	$	2,275.00
Labour	3,000 units @ 10.4c		312.00
Manufacturing Expense	3,000 units @ 3.4⅔c		104.00
Total		$	2,691.00

Department C

Previous Dept. Cost.	5,000 units @ 59.3⅓c	$	2,968.33
Labour	2,500 units @ 15c		375.00
Manufacturing Expense	2,500 units @ 10c		250.00
Total		$	3,593.33

(4) Selling Price per unit of completed product

Cost to manufacture	84.3-2/3c
Gross Profit 50% on cost	42.1-5/6c
Selling Price	126.5-1/2c
	($1.2655)

Comments on Question 2

This process cost problem was not particularly difficult, but the student should observe that the unit material cost is calculated on the basis of 24,000 units, whereas labour and manufacturing expenses are calculated on the basis of 22,000 units. This difference in base would no doubt have been ignored by some candidates, but is typical of such problems, and one which must be familiar to students in Fundamental's examination.

Theses Available for Reference

(Agricultural Implements) — A Process Cost System
Assembly Type Industry — Job Cost in an
Automobile Industry — Specification Costing In
Automobile Radiator Industry — Cost Accounting in an
Automobile Tires — A Cost Accounting System for the Manufacture of
Boat Manufacturing Industry — Cost Accounting & Control for a Small
Brush Manufacturers — A Standard Cost System for
By-Product Coke Industry — Costs in the
Canning Industry — Cost Control in the
Construction Products — Cost Accounting for a Plant Manufacturing
Corrugated Paper Containers — Accounting Procedure for Manufacture of
Drug Manufacturing Company — Cost Control in a
Electric Utility — Cost Accounting for an
Electrical Products Company — Cost Accounting in an
Hardware Manufacture — Cost Accounting in
Hospital — Accounting for an Endowed
Hospital — Cost Accounting in a General
Iron Pipe Unions — Cost Accounting in Manufacture of
Laundry — Cost Accounting for a
(Machines) — Cost Accounting in a Small Factory
(Machines — Steam Pressing) — Cost Accounting for Control
Metal Stamping Plant — Cost & Production Control in a
Metal Industry — Cost Accounting & Budgetary Control for the
Mining Industry — Cost Accounting for the
(Model Airplanes) — Cost Control in a Small Industry
Office Equipment — Cost Accounting for Manufacture of
(Paper Boxes) — Standard Cost Accounting
Parts Manufacturing Plant — Standard Costs & Production Control in a
Pottery — Cost Accounting in a
Radio & Optical Instruments — Cost Accounting in Crown Company Manufacturing
Radio Tubes — Cost Accounting for Manufacture of
Rubber Industry — Cost Accounting in the
Shipbuilding Industry — Cost Accounting for the
Spring Manufacturing Company — Cost Accounting in a
Steam Power Plant Equipment — Accounting for Costs in the Manufacture of
(Steel — Structural) — Cost Accouuting & Budgetary Control.
Textile Manufacturing Plant (Underwear & Hosiery) — Cost Accounting in a Secondary
Thread Manufacturing Firm — Standard Cost in a
Transit Company — Cost Accounting in the Rolling Stock Department of a
Tube & Cap Company — Cost Accounting for a
Valves & Fittings — Cost Procedure for Company Manufacturing
Wire Weaving Industry — Costs in a
Woollen Weaving Plant — Cost Accounting in a

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